

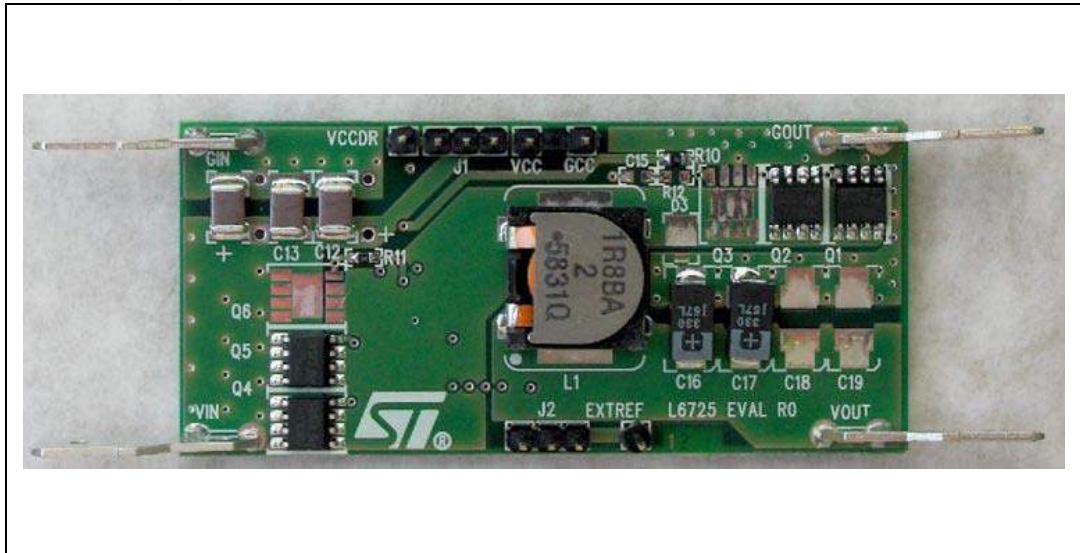
## L6725: 20A Demoboard

Data Brief

### General description

L6725 demoboard realizes in a four layer PCB a step-down DC/DC converter and shows the operation of the device in a general purpose application. The input voltage can range from 4.5 V to 14 V and the output voltage is at 3.3 V. The module can deliver an output current in excess of 20 A. The switching frequency is set at 250 KHz (controller free-running  $F_{SW}$ ) but it can be set to 500 KHz acting on the EAREF pin.

### Demoboard picture



# 1 Features

Figure 1. Demoboard schematic

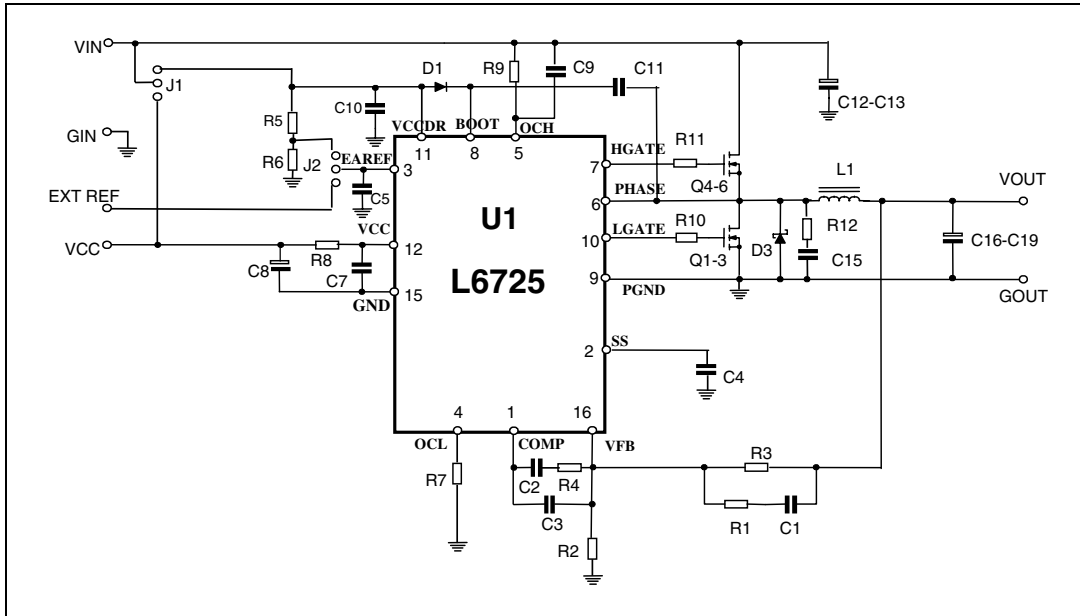


Table 1. Demoboard part list

Reference	Value	Manufacturer	Package	Supplier
R1	1 kΩ	Neohm	SMD 0603	IFARCAD
R2	1 kΩ	Neohm	SMD 0603	IFARCAD
R3	4.7kΩ			
R4	2.7 kΩ	Neohm	SMD 0603	IFARCAD
R5	0 Ω	Neohm	SMD 0603	IFARCAD
R6	N.C.	Neohm	SMD 0603	IFARCAD
R7	2 kΩ	Neohm	SMD 0603	IFARCAD
R8	10 Ω	Neohm	SMD 0603	IFARCAD
R9	1.5 kΩ	Neohm	SMD 0603	IFARCAD
R10	2.2 Ω	Neohm	SMD 0603	IFARCAD
R11	2.2 Ω	Neohm	SMD 0603	IFARCAD
R12	N.C.	Neohm	SMD 0603	IFARCAD
C1	4.7 nF	Kemet	SMD 0603	IFARCAD
C2	47 nF	Kemet	SMD 0603	IFARCAD
C3	1 nF	Kemet	SMD 0603	IFARCAD
C4	100 nF	Kemet	SMD 0603	IFARCAD
C5	100 nF	Kemet	SMD 0603	IFARCAD

**Table 1. Demoboard part list (continued)**

Reference	Value	Manufacturer	Package	Supplier
C6	N.C.	/	/	/
C7	100 nF	Kemet	SMD 0603	IFARCAD
C8	4.7 $\mu$ F 20 V	AVX	SMA6032	IFARCAD
C9	1 nF	Kemet	SMD 0603	IFARCAD
C10	1 $\mu$ F	Kemet	SMD 0603	IFARCAD
C11	220 nF	Kemet	SMD 0603	IFARCAD
C12-13	3X 15 $\mu$ F	/	/	ST (TDK)
C15	N.C.	/	/	/
C16-19	2X 330 $\mu$ F	/	/	ST (poscap)
L1	1.8 $\mu$ H	Panasonic	SMD	ST
D1	STPS1L30M	ST	DO216AA	ST
D3	N.C.	/	/	/
Q1-Q2	STS12NH3LL	ST	SO8	ST
Q4-Q5	STS25NH3LL	ST	SO8	ST
U1	L6725	ST	SO16N	ST

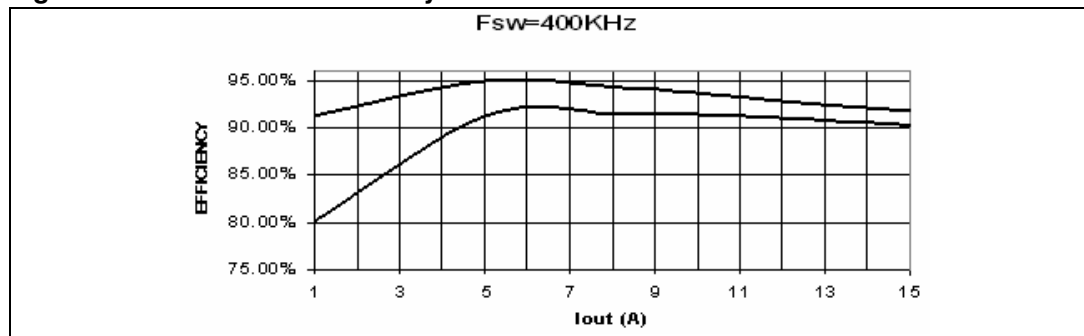
**Table 2. Other inductor manufacturer**

Manufacturer	Series	Inductor value ( $\mu$ H)	Saturation current (A)
WURTH ELEKTRONIC	744318180	1.8	20
SUMIDA	CDEP134-2R7MC-H	2.7	15
EPCOS	HPI_13 T640	1.4	22
TDK	SPM12550T-1R0M220	1	22
TOKO	FDA1254	2.2	14
COILTRONICS	HCF1305-1R0	1.15	22
	HC5-1R0	1.3	27

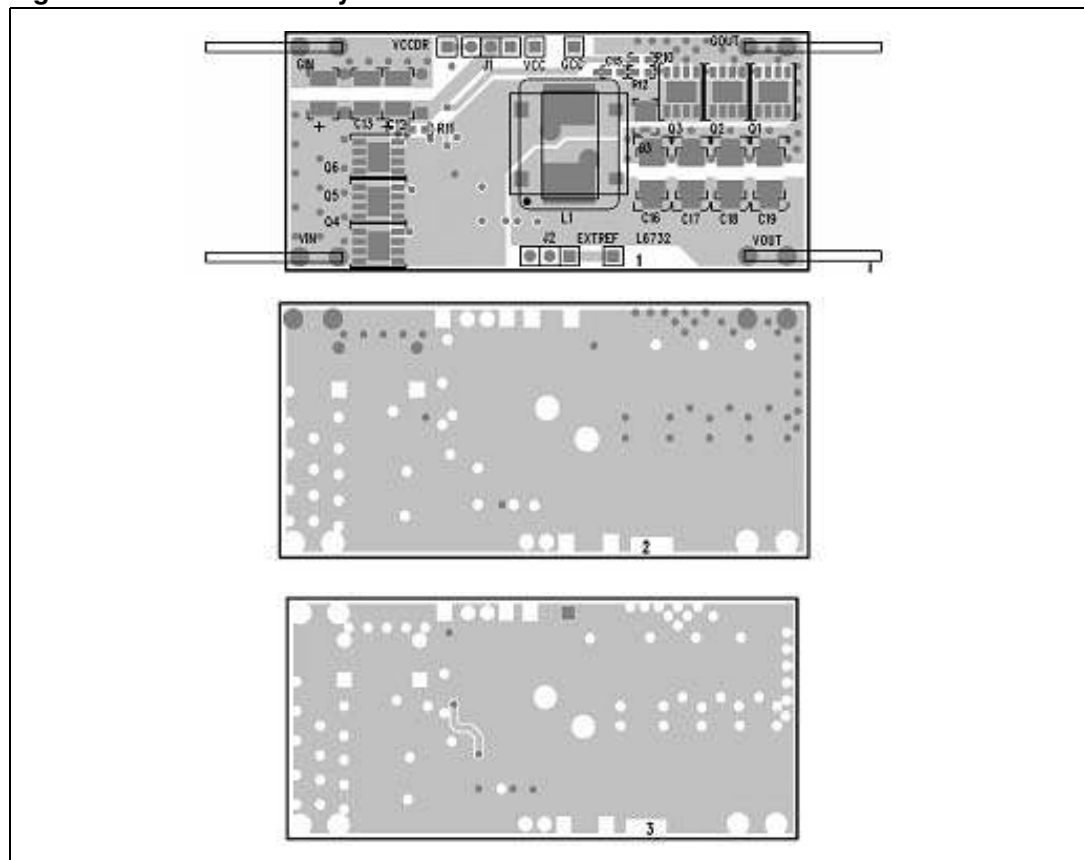
**Table 3. Other capacitor manufacturer**

Manufacturer	Series	Capacitor value( $\mu$ F)	Rated voltage (V)
TDK	C4532X5R1E156M	15	25
	C3225X5R0J107M	100	6.3
NIPPON CHEMI-CON	25PS100MJ12	100	25
PANASONIC	ECJ4YB0J107M	100	6.3

**Figure 2. Demoboard efficiency**



**Figure 3. Demoboard layout**



## 2 Revision history

**Table 4. Revision history**

Date	Revision	Changes
03-Jan-2007	1	First issue

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